

Environmental Sciences

A BIOASSESSMENT OF FISH POPULATIONS IN THE OHIO RIVER NEAR ZIMMER POWER PLANT, MOSCOW, OHIO.

Andrew J. Farwick and Chris N. Lorentz*

Thomas More College Biology Department

Center for Ohio River Research and Education,

Thomas More College Biology Field Station, California, KY 41007.

http://www2.thomasmore.edu/index_flash.cfm

As part of ongoing research spanning over three decades of the Ohio River in Northern Kentucky, a bioassessment of the fishes and an examination of associated physiochemical parameters were performed. The primary objectives of this study were to assess the current composition of the fish community, examine spatial variation among the populations at the plant, upstream and downstream from the plant and investigate the hydrological, chemical, and physical characteristics of the Ohio River near the power plant. The goal of the study was to determine the potential impacts of the plant on the River ecosystem. A total of 38 fish species comprising over 2000 individuals were collected by electrofishing, gill net, and hoop net techniques. In the upstream sites, 31 species were collected from a total of 1688 individuals. In the downstream sites 32 species were collected from a total of 689 individuals. This sampling of upstream and downstream areas around Zimmer revealed very comparable fish communities. Air and water temperatures followed both seasonal and daily patterns as expected. The mean air temperature was 24.37°C and the mean water temperature was 26.72°C. Dissolved oxygen (DO) levels showed little variation with a mean of 7.25 mg/L. There was no substantial difference between sites when measuring water pH. The mean pH value for all sites was 8.37. The results of this year's study were comparable with previous years having comparable findings in the upstream and downstream sites. Overall, based on the data collected, the operations of the Zimmer Power Plant appear to have little to no impact on the fish communities and other ecosystem features of the Ohio River, near Moscow, Ohio.